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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/660,379	09/11/2003	David J. Schroeder	100191	6019
29050	7590	08/18/2004	EXAMINER	
STEVEN D WESEMAN, ASSOCIATE GENERAL COUNSEL, IP CABOT MICROELECTRONICS CORPORATION 870 NORTH COMMONS DRIVE AURORA, IL 60504			GOURDREAU, GEORGE A	
			ART UNIT	PAPER NUMBER
			1763	

DATE MAILED: 08/18/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No.	Applicant(s)	
	10/660,379	SCHROEDER ET AL.	
	Examiner George A. Goudreau	Art Unit 1763	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --
Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM
 THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) Responsive to communication(s) filed on (9-11-03' or 12-9-03').
- 2a) This action is FINAL. 2b) This action is non-final.
- 3) Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) Claim(s) 1-86 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) Claim(s) _____ is/are allowed.
- 6) Claim(s) 1-86 is/are rejected.
- 7) Claim(s) _____ is/are objected to.
- 8) Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) The specification is objected to by the Examiner.
- 10) The drawing(s) filed on _____ is/are: a) accepted or b) objected to by the Examiner.
 Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
 Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) All b) Some * c) None of:
1. Certified copies of the priority documents have been received.
 2. Certified copies of the priority documents have been received in Application No. _____.
 3. Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

George A. Goudreau
GEORGE GOUDREAU
PRIMARY EXAMINER

Attachment(s)

- 1) Notice of References Cited (PTO-892)
- 2) Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
 Paper No(s)/Mail Date _____
- 4) Interview Summary (PTO-413)
 Paper No(s)/Mail Date. _____
- 5) Notice of Informal Patent Application (PTO-152)
- 6) Other: _____

1. Claims 1-86 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

In claims 1, 11-31, 21, 32-34, 43, 54-56, 64, and 76-78, it is unclear what actual concentration of alkaline earth metals, which is being claimed by the applicant. (i.e.-The wording used in these claims is written in a very confusing manner in this regard, and the claims should be reworded.)

2. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

3. This application currently names joint inventors. In considering patentability of the claims under 35 U.S.C. 103(a), the examiner presumes that the subject matter of the various claims was commonly owned at the time any inventions covered therein were made absent any evidence to the contrary. Applicant is advised of the obligation under 37 CFR 1.56 to point out the inventor and invention dates of each claim that was not commonly owned at the time a later invention was made in order for the examiner to consider the applicability of 35 U.S.C. 103(c) and potential 35 U.S.C. 102(e), (f) or (g) prior art under 35 U.S.C. 103(a).

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4. Claims 1-6, 11, 14-18, 21-27, 32-40, 43, 54-61, 64, and 76-84 are rejected under 35 U.S.C. 103(a) as being unpatentable over Suzumura et. al. (JP 11-080,707).

Suzumura et. al. disclose a process for cmp polishing a SiO₂ layer on a wafer using a cmp slurry which is comprised of the following components:

- H₂O;
- an abrasive (i.e.-SiO₂, etc.) ;
- carbonic acid (i.e.- a type of oxidant); and
- a cation (i.e.-an alkaline earth metal such as Ca, etc.)

The process is conducted using the cmp slurry at a PH of (4-10).

This is discussed specifically in the abstract; and discussed in general in columns 1-11. Suzumura et. al. fail, however, to specifically disclose the following aspects of applicant's claimed invention:

- the specific cmp polishing process parameters, which are claimed by the applicant

It would have been prima facie obvious to one skilled in the art to employ any of a variety of different cmp polishing process parameters in the cmp polishing process taught above including those which are specifically claimed by the applicant. These are all well known variables in the cmp art, which are known to affect both the rate and the quality of the cmp process. Further, the selection of particular values for these variables would not necessitate any undo experimentation, which would have been indicative of unexpected results.

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Alternatively, it would have been obvious to one skilled in the art to employ the specific process parameters, which are claimed by the applicant based upon *In re Aller* as cited below.

"Where the general conditions of a claim are disclosed in the prior art, it is not inventive to discover the optimum or workable ranges by routine experimentation." *In re Aller*, 220 F. 2d 454, 105 USPQ 233, 235 (CCPA).

Further, all of the specific process parameters which are claimed by the applicant are results effective variables whose values are known to effect both the rate, and the quality of the cmp polishing process.

5. Claims 1-8, 11-29, 32-43, 54-64, and 76-86 are rejected under 35 U.S.C. 103(a) as being unpatentable over Suzumura et. al. (JP 11-080,708).

Suzumura et. al. disclose a process for cmp polishing a SiO₂ layer on the surface of a Si wafer which employs a cmp slurry comprised of the following components:

- H₂O;
- an abrasive (i.e.-SiO₂, etc.);
- an anion (i.e.- an acid (nitric acid, formic acid, acetic acid, citric acid, malic acid, etc.) which is capable of acting as an oxidant); and
- a cation (i.e.-an alkaline earth metal such as Ca, etc.)

The cmp process is conducted using the cmp slurry with a pH of (4-10).

This is discussed specifically in the abstract; and discussed in general in columns 1-8. Suzumura et. al. fail, however, to specifically disclose the following aspects of applicant's claimed invention:

-the specific cmp polishing process parameters, which are claimed by the applicant

It would have been prima facie obvious to one skilled in the art to employ any of a variety of different cmp polishing process parameters in the cmp polishing process taught above including those which are specifically claimed by the applicant. These are all well known variables in the cmp art, which are known to effect both the rate and the quality of the cmp process. Further, the selection of particular values for these variables would not necessitate any undo experimentation, which would have been indicative of unexpected results.

Alternatively, it would have been obvious to one skilled in the art to employ the specific process parameters, which are claimed by the applicant based upon *In re Aller* as cited below.

"Where the general conditions of a claim are disclosed in the prior art, it is not inventive to discover the optimum or workable ranges by routine experimentation." *In re Aller*, 220 F. 2d 454, 105 USPQ 233, 235 (CCPA).

Further, all of the specific process parameters which are claimed by the applicant are results effective variables whose values are known to effect both the rate, and the quality of the cmp polishing process.

6. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

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7. Any inquiry concerning this communication should be directed to examiner

George A. Goudreau at telephone number (571)-272-1434.

George A. Goudreau
George A. Goudreau
Primary Examiner
Art Unit 1763